

DESIGN NOTES

Specifications:

Design: Bridge Design Specifications (1983 AASHTO Specifications with revisions by Caltrans). Depth of cover is assumed to be uniform.

Earth Load:

Earth pressures for two conditions:  
-140 lb/cf vert, 42 lb/cf horiz  
-140 lb/cf vert, 140 lb/cf horiz

Unit Stresses:

f'c = 5.0 KSI  
f'y = 65.0 KSI for weld wire fabric  
n = 7

Shear:

Maximum allowable shear,  $v = 3.5\sqrt{f'c}$ , PSI

Exclusion:

Axial loading on the members has not been considered.

Earthwork:

See "Precast RCB Culvert,Excavation and Backfill Details" sheet.

GENERAL NOTES

Designation:

Standard single or multiple precast box culverts are shown on the plans as span times height with maximum cover over roof thus: 8' x 5' RCB with 10'-0" or double 10' x 5' RCB with 20'-0", followed by alternatives.

Alternatives:

Single cell:

Standard dimensions of AASHTO Material Specification 'M259' or 'M273'.

Multiple Cell:

Constructed by placing single cells adjacent to each other. Inlet and outlet ends of culvert will be rounded unless square ends are designated. Parapet will be shown unless designated in plans. Such designation may be different for inlet and outlet ends.

Limitations:

Where the overfill is less than 12", Precast RCB culverts are not to be used. Precast RCB culverts are not to be used in siphon or pressurized installations unless appropriate "watertight" jointing is provided.

Special Reinforcement Coverage:

Precast RCB culvert standard details are not to be used in a corrosive environment or where there is a severe abrasive flow condition or freeze-thaw locations.

Special design:

Required for culvert with different conditions,or loads or design bearing pressures greater than those given on these plans. Required for culverts where end details need higher skew angles or higher parapets or barrier sections.

CONSTRUCTION NOTES

Cutoff Walls:

4'-0" Cutoff walls are to be provided at inlet and/or outlet unless channel is lined and unless otherwise shown. These walls are to be extended if scour conditions warrant. See Standard Plans D84, D85 and D86A.

Wingwalls:

Wingwalls shall be cast-in-place and shall conform to standard plan details for box culvert wingwalls. See Standard Plan D84, D85 and D86A.

Earthwork:

See "Precast RCB Culvert,Excavation and Backfill Details" sheet.

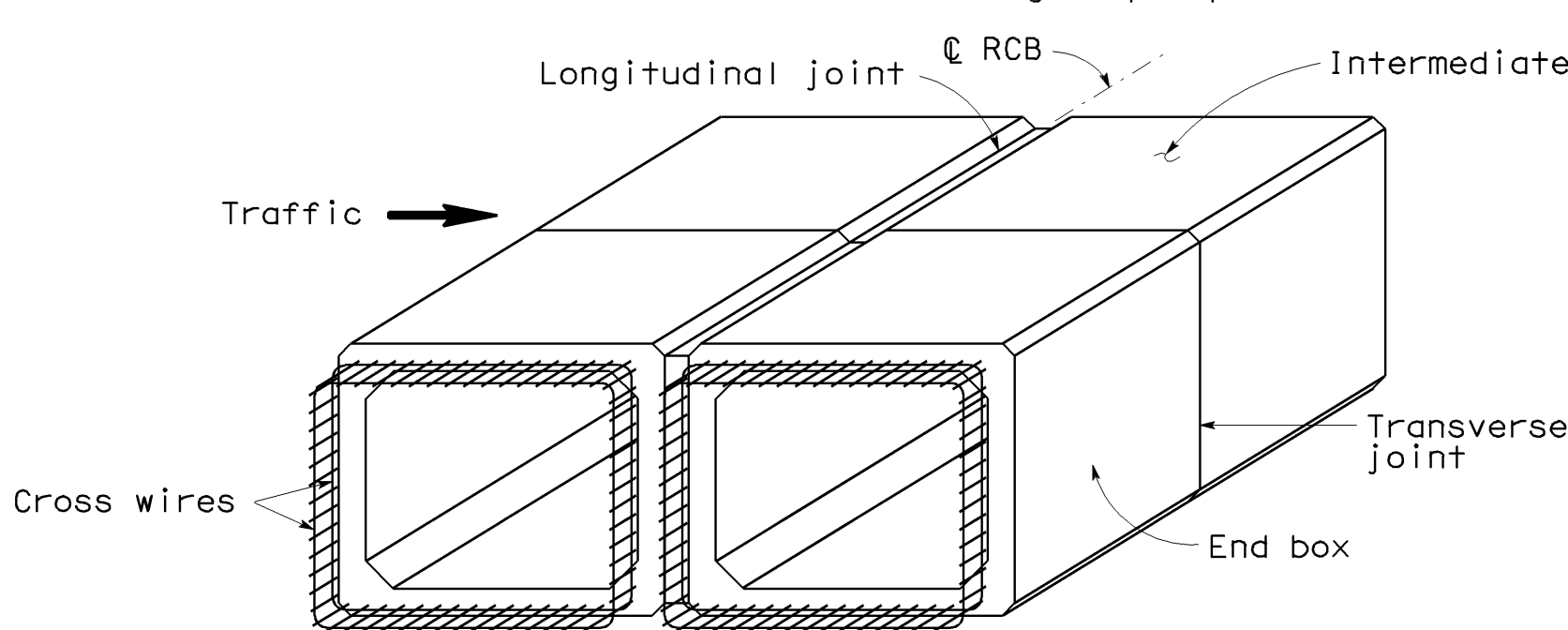
Construction Loads:

Strutting may be required near temporary ends. For construction loads on culverts, See Standard Plan D88.

Parapet "P" Bars			
Skew Angle	0° to 15°	16° to 30°	31° to 45°
Span			
4'-0"	#5	#5	#5
6'-0"	#5	#5	*
8'-0"	#5	#5	*
10'-0"	#5	*	*
12'-0"	#6	*	*

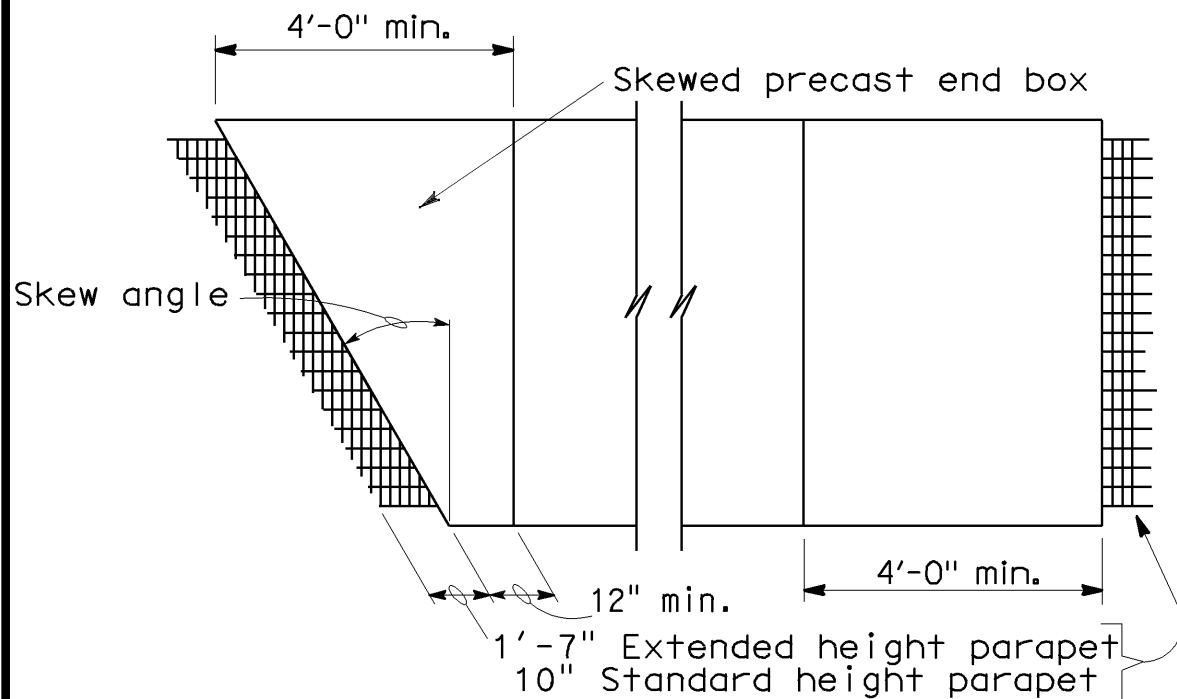
PARAPET REINFORCEMENT

\* Design limited by skew of precast reinforced concrete box section



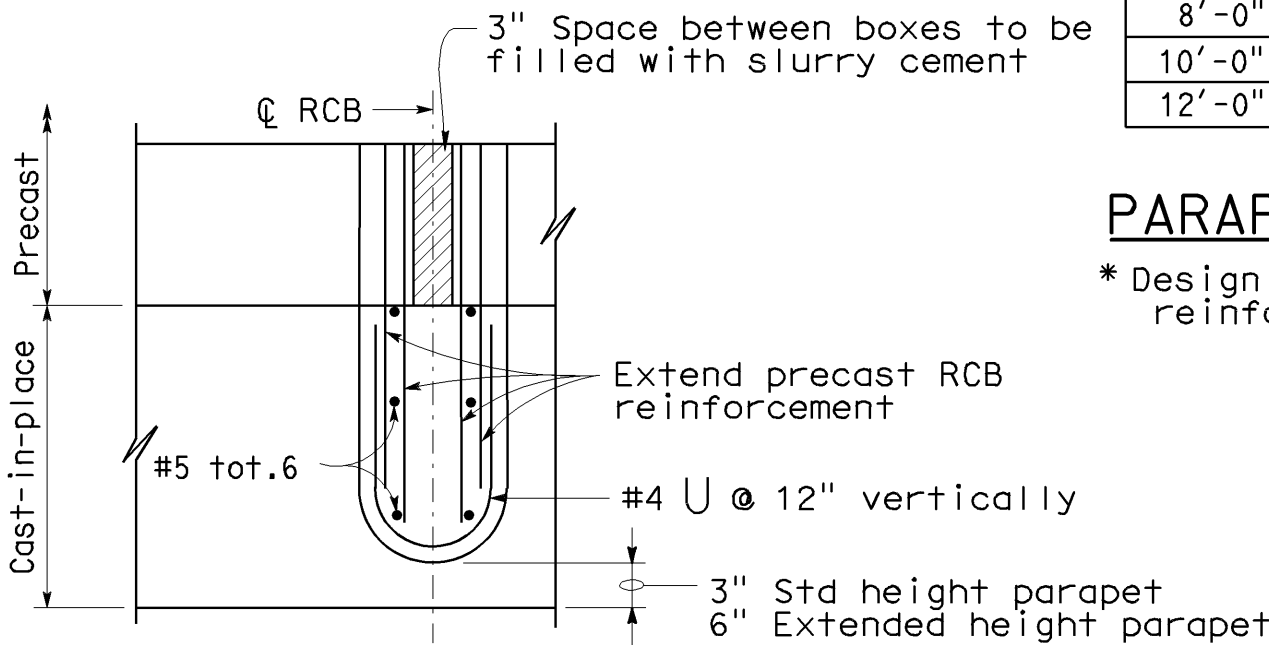
PRECAST RCB TERMINOLOGY

Note: Inner and outer reinforcement to be exposed as required to tie to cast-in-place construction. A minimum of two cross wires shall be exposed on all sides.

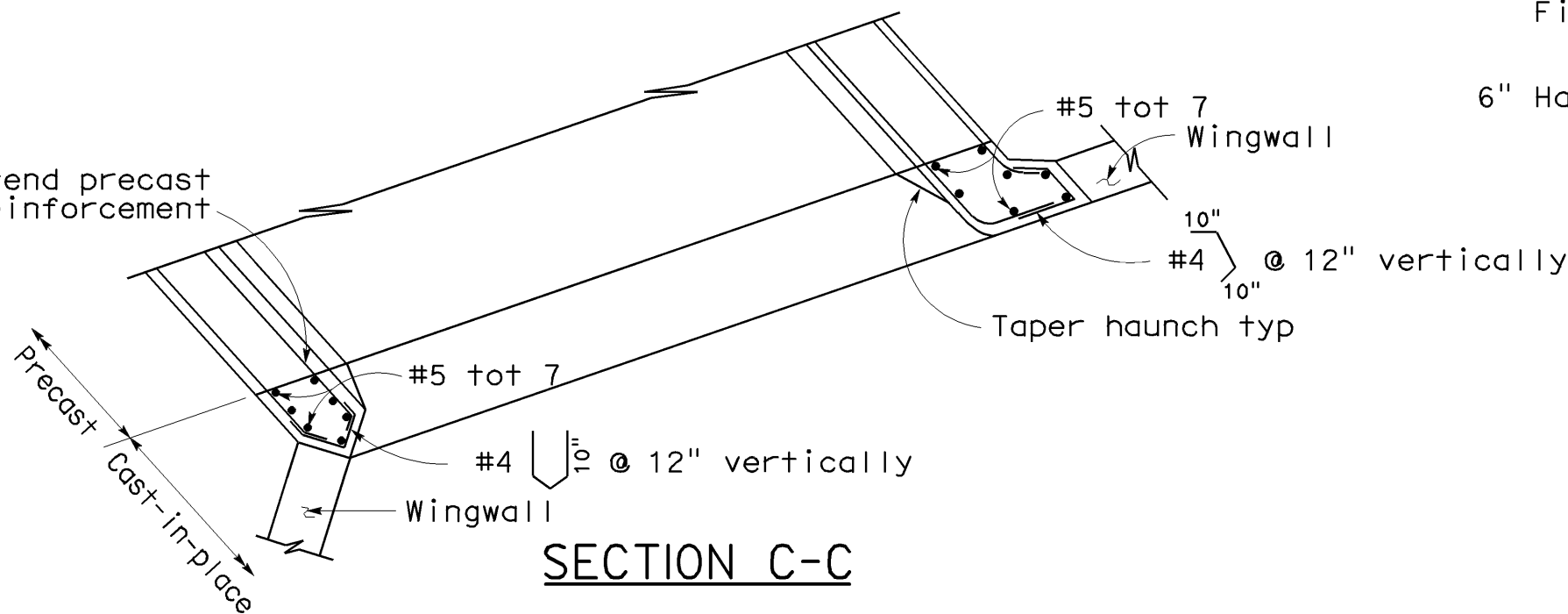


PARTIAL PLAN VIEW

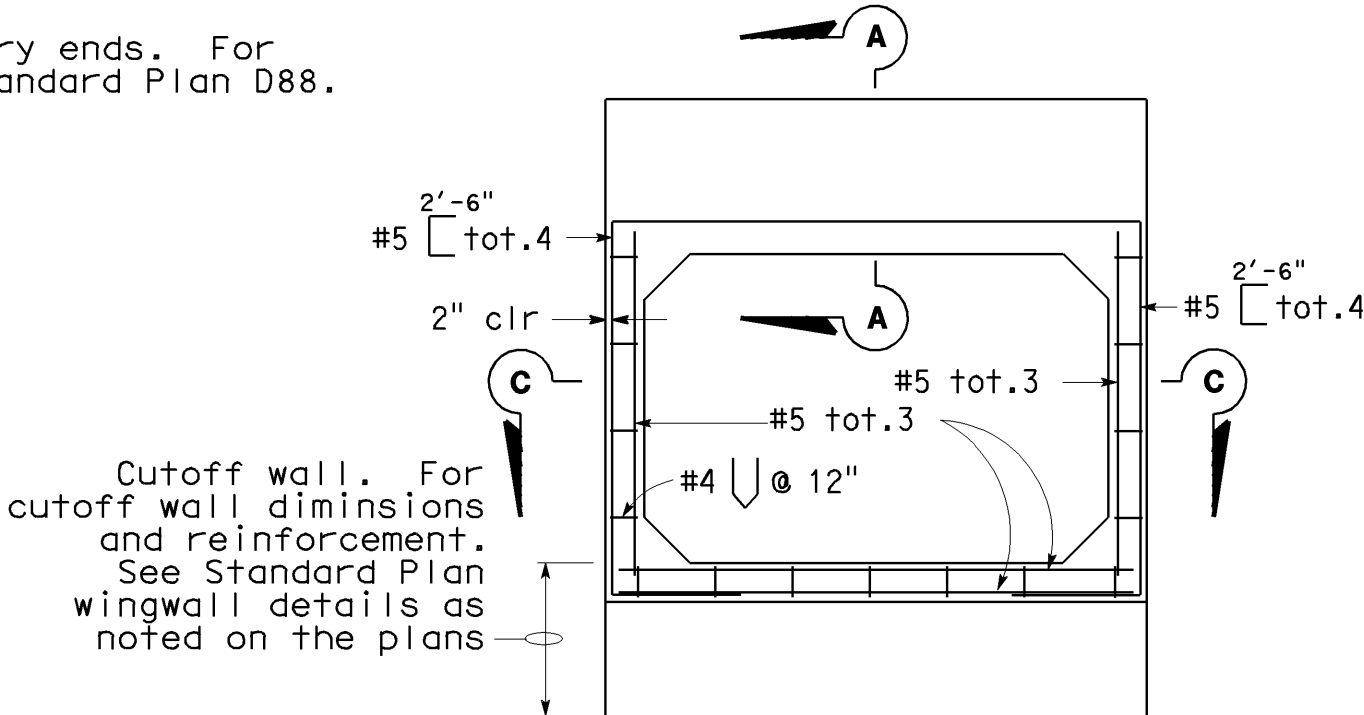
For illustrative purposes only.  
For correct skew direction see plans.



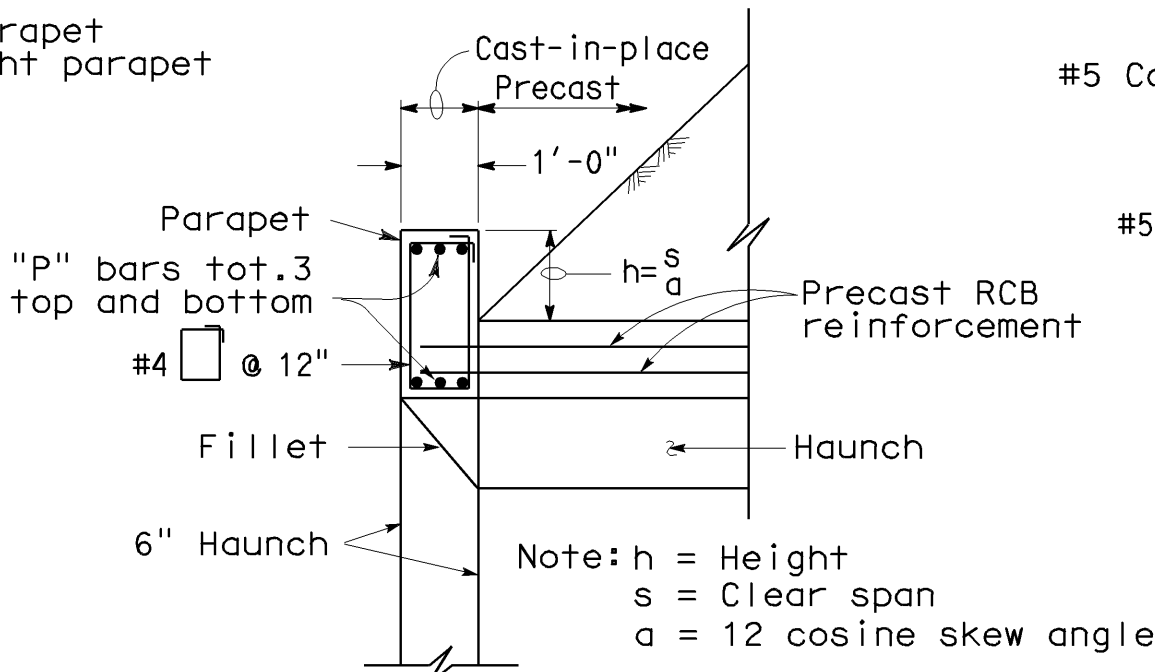
PARTIAL PLAN INTERIOR WALL  
MULTICELL CULVERT



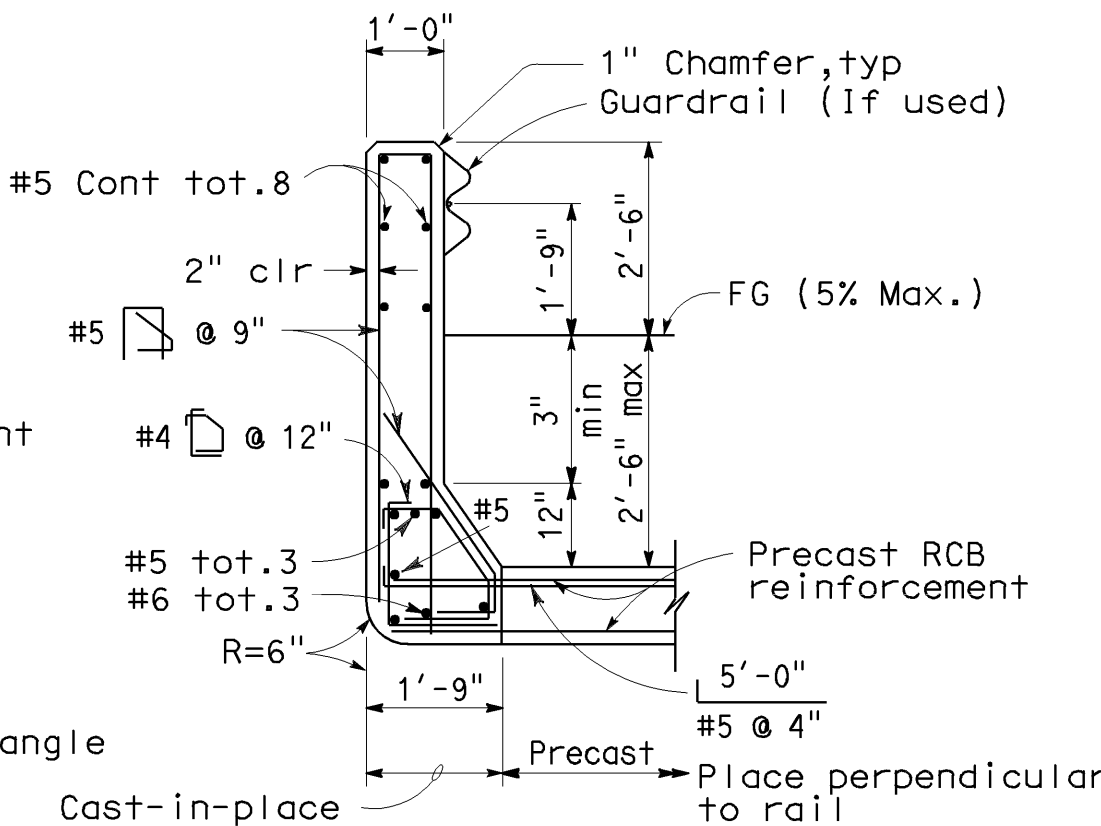
SECTION C-C



CAST-IN-PLACE  
END ELEVATION



SECTION A-A  
(Standard Height Parapet)



SECTION A-A  
(Extended Height Parapet)

TYPICAL CULVERT END DETAILS  
For wall and invert reinforcement not shown, See "End Elevation" detail

NO SCALE

STANDARD DRAWING				
RELEASE DATE	11/14/05	DESIGN	BY WOODY	CHECKED GALLAGHER
FILE NO.	xs17-030e	DETAILS	BY R. YEE	CHECKED GALLAGHER
		SUBMITTED	BY D. FORESTER	DRAWING DATE 4/92

RELEASED BY  
*Roberto L. L. L.*  
OFFICE CHIEF

STATE OF  
**CALIFORNIA**  
DEPARTMENT OF TRANSPORTATION

DIVISION OF  
ENGINEERING SERVICES

BRIDGE NO.  
POST MILE

CULVERT - PRECAST RCB  
MISCELLANEOUS DETAILS

DS OSD 2147A (REV. X/XX/XX)

ORIGINAL SCALE IN INCHES  
FOR REDUCED PLANS

0 1 2 3

CU  
EA

DISREGARD PRINTS BEARING  
EARLIER REVISION DATES  
USERNAME => rfwj

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

xs17-030e.dgn